

09/537,654

SESSION RESUMED IN FILE 'AGRICOLA, BIOSIS, CAPLUS, CABA'
AT 10:19:23 ON 18 OCT 2001

=> s rad51

L4 1203 RAD51

=> s l4 and maize

L5 8 L4 AND MAIZE

=> d ti 1-8

L5 ANSWER 1 OF 8 AGRICOLA

TI Three-dimensional microscopy of the **Rad51** recombination protein during meiotic prophase.

L5 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2001 BIOSIS

TI Three-dimensional microscopy of the **Rad51** recombination protein during meiotic prophase.

L5 ANSWER 3 OF 8 BIOSIS COPYRIGHT 2001 BIOSIS

TI **Rad51** distribution is altered in desynaptic2, a **maize** meiotic mutant that has abnormal chromosome pairing.

L5 ANSWER 4 OF 8 BIOSIS COPYRIGHT 2001 BIOSIS

TI Using 3-D immunocytology to explore the roles of mismatch binding proteins in meiosis.

L5 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2001 ACS

TI Protein and cDNA sequences of **maize RAD51**-like gene and uses thereof in transgenic plants

L5 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2001 ACS

TI Nucleotide sequences encoding **maize RAD51** recombinases

L5 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2001 ACS

TI Three-dimensional microscopy of the **Rad51** recombination protein during meiotic prophase

L5 ANSWER 8 OF 8 CABA COPYRIGHT 2001 CABI

TI Three-dimensional microscopy of the **Rad51** recombination protein during meiotic prophase.

=> d bib abs 6

L5 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2001 ACS

AN 1999:529275 CAPLUS

DN 131:154494

TI Nucleotide sequences encoding **maize RAD51** recombinases

IN Bowen, Benjamin A.; Chamberlin, Mark A.; Drummond, Bruce J.; McElver, John A.; Rothstein, Rodney J.

PA Pioneer Hi-Bred International, Inc., USA

SO PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9941394	A1	19990819	WO 1999-US2900	19990211
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	AU 9926699	A1	19990830	AU 1999-26699	19990211
	EP 1053339	A1	20001122	EP 1999-906894	19990211
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			

PRAI US 1998-74745 P 19980213

WO 1999-US2900 W 19990211

AB Nucleic acid sequences encoding two **RAD51** recombinases active in **maize** plants are provided. Full-length cDNA sequences from a **maize** tassel cDNA library, including the ZmRAD51 coding sequences and unique 3-untranslated regions which are useful as RFLP probes, are

also provided. RFLP mapping indicates that the Zea mays genome contains 2 genes encoding different variants of the ZmRAD51 recombinase enzyme, one mapped to chromosome 7 and the other on chromosome 3. The prodn. of plasmids contg. a nucleic acid sequence encoding a ZmRAD51 fusion protein, as well as the use of the plasmids to introduce the ZmRAD51 coding sequence into a host cell, such as **maize** cell, are also disclosed.

RE.CNT 3

RE

- (1) Smith, K; EMBL Sequence Data Library 1996
- (2) William, G; WO 9741228 A 1997 CAPLUS
- (3) Yeager Stassen, N; Current Genetics 1996

=> s l1 and (rice or barley or wheat)

L6 344 L1 AND (RICE OR BARLEY OR WHEAT)

=> duplicate remove l6

L7 184 DUPLICATE REMOVE L6 (160 DUPLICATES REMOVED)

=> s l7 and (gene or DNA)

L8 184 L7 AND (GENE OR DNA)

=> d ti 1-50

L8 ANSWER 1 OF 184 AGRICOLA

TI Heterologous expression of genes mediating enhanced fungal resistance in transgenic **wheat**.

L8 ANSWER 2 OF 184 AGRICOLA

TI Regeneration of a lytic central vacuole and of neutral peripheral vacuoles can be visualized by green fluorescent proteins targeted to either type of vacuoles.

L8 ANSWER 3 OF 184 AGRICOLA

TI Enhanced resistance to sheath blight by constitutive expression of infection-related **rice chitinase** in transgenic elite indica **rice** cultivars.

L8 ANSWER 4 OF 184 AGRICOLA

TI **Chitinase** genes responsive to cold encode antifreeze proteins in winter cereals.

L8 ANSWER 5 OF 184 AGRICOLA

TI Expression of plant defence-related (PR-protein) transcripts during hardening and dehardening of winter **wheat**.

L8 ANSWER 6 OF 184 AGRICOLA

TI Flower-predominant expression of a **gene** encoding a novel class I **chitinase** in **rice** (*Oryza sativa* L.).

L8 ANSWER 7 OF 184 AGRICOLA

TI Transgenic grapevine plants expressing a **rice chitinase** with enhanced resistance to fungal pathogens.

L8 ANSWER 8 OF 184 AGRICOLA

TI Fungal development and induction of defense response genes during early infection of **wheat** spikes by *Fusarium graminearum*.

L8 ANSWER 9 OF 184 AGRICOLA

TI Agrobacterium-mediated engineering for sheath blight resistance of indica **rice** cultivars from different ecosystems.

L8 ANSWER 10 OF 184 AGRICOLA

TI A transient assay system for the functional assessment of defense-related genes in **wheat**.

L8 ANSWER 11 OF 184 AGRICOLA

TI Transgenic chrysanthemum (*Dendranthema grandiflorum* (Ramat.) Kitamura) expressing a **rice chitinase gene** shows enhanced resistance to gray mold (*Botrytis cinerea*).

L8 ANSWER 12 OF 184 AGRICOLA

TI Enhanced resistance to blast (*Magnaporthe grisea*) in transgenic Japonica **rice** by constitutive expression of **rice chitinase**.

L8 ANSWER 13 OF 184 AGRICOLA

TI Elicitor action via cell membrane of a cultured **rice** cell demonstrated by the single-cell transient assay.

L8 ANSWER 14 OF 184 AGRICOLA
 TI Genetic engineering of **wheat** for increased resistance to powdery mildew disease.

L8 ANSWER 15 OF 184 AGRICOLA
 TI Development of **wheat** scab symptoms is delayed in transgenic **wheat** plants that constitutively express a **rice** thaumatin-like protein **gene**.

L8 ANSWER 16 OF 184 AGRICOLA
 TI Regulation of the **chitinase gene** expression in suspension-cultured **rice** cells by N-acetylchitooligosaccharides: differences in the signal transduction pathways leading to the activation of elicitor-responsive genes.

L8 ANSWER 17 OF 184 AGRICOLA
 TI Inheritance, expression, and silencing of a **chitinase** transgene in **rice**.

L8 ANSWER 18 OF 184 AGRICOLA
 TI Candidate **gene** analysis of quantitative disease resistance in **wheat**.

L8 ANSWER 19 OF 184 AGRICOLA
 TI **Gene** activation of cytoplasmic acidification in suspension-cultured **rice** cells in response to the potent elicitor, N-acetylchitoheptaose.

L8 ANSWER 20 OF 184 AGRICOLA
 TI Interactions between cold hardening and Microdochium nivale infection on expression of pathogenesis-related genes in winter **wheat**.

L8 ANSWER 21 OF 184 AGRICOLA
 TI Introduction and constitutive expression of a **rice chitinase gene** in bread **wheat** using biolistic bombardment and the bar **gene** as a selectable marker.

L8 ANSWER 22 OF 184 AGRICOLA
 TI Differential induction of apoplastic peroxidase and **chitinase** activities in susceptible and resistant **wheat** cultivars by Russian **wheat** aphid infestation.

L8 ANSWER 23 OF 184 AGRICOLA
 TI Genetic engineering of disease resistance in cereals.

L8 ANSWER 24 OF 184 AGRICOLA
 TI A new class II **rice chitinase**, Rcht2, whose induction by fungal elicitor is abolished by protein phosphatase 1 and 2A inhibitor.

L8 ANSWER 25 OF 184 AGRICOLA
 TI Expression of a **chitinase** transgene in rose (Rosa hybrida L.) reduces development of blackspot disease (Diplocarpon rosae Wolf).

L8 ANSWER 26 OF 184 AGRICOLA
 TI Transgenic cucumber plants harboring a **rice chitinase gene** exhibit enhanced resistance to gray mold (Botrytis cinerea).

L8 ANSWER 27 OF 184 AGRICOLA
 TI Salicylic acid accumulation in **barley** is pathogen specific but not required for defense-**gene** activation.

L8 ANSWER 28 OF 184 AGRICOLA
 TI Expression of beta-1,3-glucanase and **chitinase** in healthy, stem-rust-affected and elicitor-treated near-isogenic **wheat** lines showing Sr5- or Sr24-specified race-specific rust resistance.

L8 ANSWER 29 OF 184 AGRICOLA
 TI Enhanced quantitative resistance against fungal disease by combinatorial expression of different **barley** antifungal proteins in transgenic tobacco.

L8 ANSWER 30 OF 184 AGRICOLA
 TI Transgenic potato plants with enhanced resistance to the tomato moth, Lacanobia oleracea: growth room trials.

L8 ANSWER 31 OF 184 AGRICOLA
 TI Regulation, expression and function of a new basic **chitinase gene** in **rice** (Oryza sativa L.).

L8 ANSWER 32 OF 184 AGRICOLA
 TI Genetic engineering of **rice** for resistance to sheath blight.

L8 ANSWER 33 OF 184 AGRICOLA
 TI Acquired resistance in **barley**. The resistance mechanisms induced by 2,6-dichloroisonicotinic acid is a phenocopy of a genetically based mechanism governing race-specific powdery mildew resistance.

L8 ANSWER 34 OF 184 AGRICOLA
 TI Identification of an enhancer/silencer sequence directing the aleurone-specific expression of a **barley chitinase gene**.

L8 ANSWER 35 OF 184 AGRICOLA
 TI Molecular and cellular expression of quantitative resistance in **barley** to powdery mildew.

L8 ANSWER 36 OF 184 AGRICOLA
 TI Nar-1 and Nar-2, two loci required for Mla2-specified race-specific resistance to powdery mildew in **barley**.

L8 ANSWER 37 OF 184 AGRICOLA
 TI The relationship between the expression of defense-related genes and mildew development in **barley**.

L8 ANSWER 38 OF 184 AGRICOLA
 TI Sequence variation, differential expression and chromosomal location of **rice chitinase** genes.

L8 ANSWER 39 OF 184 AGRICOLA
 TI Stress induction and developmental regulation of a **rice chitinase** promoter in transgenic tobacco.

L8 ANSWER 40 OF 184 AGRICOLA
 TI Molecular basis of post-translational modifications and targeting of **barley** lectin to the vacuoles in **barley** and in transgenic tobacco plants.

L8 ANSWER 41 OF 184 AGRICOLA
 TI The **barley** lectin carboxyl-terminal propeptide is a vacuolar protein sorting determinant in plants.

L8 ANSWER 42 OF 184 AGRICOLA
 TI Identification of an endochitinase cDNA clone from **barley** aleurone cells.

L8 ANSWER 43 OF 184 AGRICOLA
 TI Isolation and characterization of a **rice gene** encoding a basic **chitinase**.

L8 ANSWER 44 OF 184 AGRICOLA
 TI cDNA cloning and characterization of a putative 1,3-beta-glucanase transcript induced by fungal elicitor in bean cell suspension cultures.

L8 ANSWER 45 OF 184 AGRICOLA
 TI Biochemical and molecular characterization of three **barley** seed proteins with antifungal properties.

L8 ANSWER 46 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Stylosanthes guianensis plants transformed with a **rice chitinase gene** confer resistance to Rhizoctonia foliar blight disease.

L8 ANSWER 47 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Use of cyanamide hydratase **gene** as a selectable marker for the transformation of sorghum.

L8 ANSWER 48 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Transgenic **wheat** plants: A powerful breeding source.

L8 ANSWER 49 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Complementary **DNA** for **rice chitinase** having lytic activity against moulds and bacteria, and vector containing said complementary **DNA** and transformant.

L8 ANSWER 50 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Isolation and characterization of novel cDNA clones of acidic chitinases and beta-1,3-glucanases from **wheat** spikes infected by Fusarium graminearum.

L7 ANSWER 1 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Transgenic tobacco expressing NtmybPS1 and PAL genes for pathogen resistance

L7 ANSWER 2 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Cloning of a vascular-specific promoter from **rice** Oshox1 **gene** and its use in making transgenic plants

L7 ANSWER 3 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Nucleic acid sequences encoding cell wall-degrading enzymes and their use to engineer plant resistance to Fusarium and other pathogens

L7 ANSWER 4 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI DNA constructs encoding chimeric plant RRK receptors (Bril::Xa21 and Hevein::Xa21), and their use in production of transgenic plants

L7 ANSWER 5 OF 184 AGRICOLA DUPLICATE 1
 TI Heterologous expression of genes mediating enhanced fungal resistance in transgenic **wheat**.

L7 ANSWER 6 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Hydrophobic interactions of the structural protein GRP1.8 in the cell wall of protoxylem elements

L7 ANSWER 7 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Construction of plant expression vector containing multiple **gene**

L7 ANSWER 8 OF 184 AGRICOLA DUPLICATE 2
 TI Enhanced resistance to sheath blight by constitutive expression of infection-related **rice chitinase** in transgenic elite indica **rice** cultivars.

L7 ANSWER 9 OF 184 CABA COPYRIGHT 2001 CABI
 TI Enhanced resistance to sheath blight by constitutive expression of infection-related **rice chitinase** in transgenic elite indica **rice** cultivars.

L7 ANSWER 10 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 3
 TI Isolation and characterization of novel cDNA clones of acidic chitinases and beta-1,3-glucanases from **wheat** spikes infected by Fusarium graminearum.

L7 ANSWER 11 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Introduction of **rice chitinase gene** into **wheat** via low energy Ar+ beam implantation

L7 ANSWER 12 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI A Survey of the Molecular Evolutionary Dynamics of Twenty-Five Multigene Families from Four Grass Taxa

L7 ANSWER 13 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 4
 TI Transgenic **wheat** plants: A powerful breeding source.

L7 ANSWER 14 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Novel transgenic **rice** strains resistant to blast and sheath blight

L7 ANSWER 15 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Rapid development of homozygous transgenic **rice** using anther culture harboring **rice chitinase gene** for enhanced sheath blight resistance

L7 ANSWER 16 OF 184 AGRICOLA
 TI Regeneration of a lytic central vacuole and of neutral peripheral vacuoles can be visualized by green fluorescent proteins targeted to either type of vacuoles.

L7 ANSWER 17 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Stylosanthes guianensis plants transformed with a **rice chitinase gene** confer resistance to Rhizoctonia foliar blight disease.

L7 ANSWER 18 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Use of cyanamide hydratase **gene** as a selectable marker for the transformation of sorghum.

L7 ANSWER 19 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Transformation of roses with genes for antifungal proteins

L7 ANSWER 20 OF 184 CABA COPYRIGHT 2001 CABI

TI Transformation of roses with genes for antifungal proteins.

L7 ANSWER 21 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Complementary **DNA** for **rice chitinase** having lytic activity against moulds and bacteria, and vector containing said complementary **DNA** and transformant.

L7 ANSWER 22 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Method for producing transgenic plants resistant to glyphosate herbicides

L7 ANSWER 23 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Method for producing transgenic plants resistant to glyphosate herbicides

L7 ANSWER 24 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Method for producing transgenic plants resistant to glyphosate herbicides

L7 ANSWER 25 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Maize chitinases and cDNAs and method of modulating **chitinase** activity in plants

L7 ANSWER 26 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Inducible plant caffeic acid O-methyltransferase II **gene** promoter and chimeric genes for expression in plants

L7 ANSWER 27 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Protein and cDNA sequences of *Urtica dioica* agglutinin and uses thereof in plant disease control

L7 ANSWER 28 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI **Wheat chitinase** genes expressed at low temperature and method for its isolation

L7 ANSWER 29 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Phytopathogenic fungi control agents containing **chitinase**

L7 ANSWER 30 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Preparation of transgenic grapes expressing **chitinase** for fungal disease resistance

L7 ANSWER 31 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Pathogen inducible promoter from *Arabidopsis thaliana* and its use in preparation of pathogen-resistance transgenic plants

L7 ANSWER 32 OF 184 AGRICOLA DUPLICATE 5
 TI **Chitinase** genes responsive to cold encode antifreeze proteins in winter cereals.

L7 ANSWER 33 OF 184 AGRICOLA DUPLICATE 6
 TI Flower-predominant expression of a **gene** encoding a novel class I **chitinase** in **rice** (*Oryza sativa* L.).

L7 ANSWER 34 OF 184 AGRICOLA DUPLICATE 7
 TI Agrobacterium-mediated engineering for sheath blight resistance of indica **rice** cultivars from different ecosystems.

L7 ANSWER 35 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Cerebroside elicitors found in diverse phytopathogens activate defense responses in **rice** plants

L7 ANSWER 36 OF 184 AGRICOLA DUPLICATE 8
 TI Transgenic grapevine plants expressing a **rice chitinase** with enhanced resistance to fungal pathogens.

L7 ANSWER 37 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Transformation system and study on the introduction of **chitinase gene** into *Linum usitatissimum*

L7 ANSWER 38 OF 184 AGRICOLA DUPLICATE 9
 TI Elicitor action via cell membrane of a cultured **rice** cell demonstrated by the single-cell transient assay.

L7 ANSWER 39 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 10
 TI Isolation and expression of a pistil-specific **chitinase gene** in **rice** (*Oryza sativa* L.).

L7 ANSWER 40 OF 184 AGRICOLA DUPLICATE 11
 TI Fungal development and induction of defense response genes during early infection of **wheat** spikes by *Fusarium graminearum*.

L7 ANSWER 41 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Identification of **chitinase** and .beta.-1,3-glucanase cDNAs from citrus fruit

L7 ANSWER 42 OF 184 CABA COPYRIGHT 2001 CABI
 TI Identification of **chitinase** and beta -1,3-glucanase cDNAs from citrus fruit.

L7 ANSWER 43 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 12
 TI Influence of fungal-bacterial interactions on bacterial conjugation in the residuesphere.

L7 ANSWER 44 OF 184 CABA COPYRIGHT 2001 CABI
 TI Regeneration of transgenic tomato plants expressing **rice chitinase gene** via Agrobacterium tumefaciens-mediated transformation.

L7 ANSWER 45 OF 184 AGRICOLA DUPLICATE 13
 TI Expression of plant defence-related (PR-protein) transcripts during hardening and dehardening of winter **wheat**.

L7 ANSWER 46 OF 184 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 14
 TI Transgenic expression of cecropin B, an antibacterial peptide from Bombyx mori, confers enhanced resistance to bacterial leaf blight in **rice**.

L7 ANSWER 47 OF 184 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 15
 TI Transgenic tobacco plant expressing a **rice chitinase** and their resistance to Alternaria alternata

L7 ANSWER 48 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Transgene identification in transgenic seeds using screenable markers linked to aleurone-specific promoters

L7 ANSWER 49 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Genes for enzymes of salicylate biosynthesis of for the induction of disease resistance in plants

L7 ANSWER 50 OF 184 CAPLUS COPYRIGHT 2001 ACS
 TI Cloning expression systems and cDNA sequences encoding antifreeze proteins from winter rye

=> s l4 and (rice or barley or wheat)

L9 4 L4 AND (RICE OR BARLEY OR WHEAT)

=> d ti 1-4

L9 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2001 ACS
 TI Homologous recombination and molecular evolution of recombination protein homologs in plants

L9 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2001 ACS
 TI Gene **RAD51** recombinase and cDNA of corn and **wheat** and use of **RAD51** in positive selection of recombinant plant cells

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2001 ACS
 TI Protein and cDNA sequences of maize **RAD51**-like gene and uses thereof in transgenic plants

L9 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2001 ACS
 TI Identification of a novel human **RAD51** homolog, RAD51B. [Erratum to document cited in CA128:201583]

=> d bib abs 2 3 1

L9 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2001 ACS
 AN 2000:814630 CAPLUS
 DN 133:360459
 TI Gene **RAD51** recombinase and cDNA of corn and **wheat** and use of **RAD51** in positive selection of recombinant plant cells
 IN Famodu, Omolayo O.; Morgante, Michele
 PA E.I. du Pont de Nemours and Company, USA
 SO PCT Int. Appl., 46 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000068390	A2	20001116	WO 2000-US12587	20000509

WO 2000068390 A3 20010503

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-133438 P 19990511

AB This invention relates to cDNAs encoding corn and wheat gene **RAD51** recombinases. The invention also relates to the construction of a chimeric gene encoding all or a substantial portion of the recombination protein, in sense or antisense orientation, wherein expression of the chimeric gene results in prodn. of altered levels of the recombination protein in a transformed host cell. Also disclosed is use of the chimeric gene for pos. selection of transformed plant cells.

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2001 ACS

AN 2000:814610 CAPLUS

DN 134:1353

TI Protein and cDNA sequences of maize **RAD51**-like gene and uses thereof in transgenic plants

IN Mahajan, Pramod B.; Shi, Jinrui

PA Pioneer Hi-Bred International, Inc., USA

SO PCT Int. Appl., 76 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000068370	A2	20001116	WO 2000-US9010	20000405
	WO 2000068370	A3	20010215		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-132582 P 19990505

AB The invention provides protein and cDNA sequences of a novel maize ortholog of **RAD51**, which shows high homol. to the human RAD51C gene. The present invention provides methods and compns. relating to altering maize **RAD51** levels in plants. The invention further provides recombinant expression cassettes, host cells, transgenic plants, and antibody compns.

L9 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2001 ACS

AN 2001:397024 CAPLUS

DN 135:1212

TI Homologous recombination and molecular evolution of recombination protein homologs in plants

IN Lassner, Michael; Delcardayre, Steven

PA Maxygen, Inc., USA

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038504	A2	20010531	WO 2000-US32289	20001122

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-167450 P 19991123

AB Methods for evolving recombinase protein homologs and RecA/VirE2 fusion proteins which complement VirE2 deficient Agrobacterium are provided. The use of recombinase protein homologs and RecA/VirE2 fusion proteins in the context of Agrobacterium-mediated transformation are provided. Methods for producing transgenic organisms by homologous recombination using

evolved recombinase proteins and Agrobacterium strains which express recombinase protein homologs or RecA/VirE2 fusion proteins are provided. Transgenic cells and organisms which have integrated an exogenous DNA sequence into a predetd. site in their genome are provided.

=> logoff hold

FILE 'HOME' ENTERED AT 08:24:16 ON 22 OCT 2001

=> file agricola biosis caplus caba

=> s rad5? and (plant or maize or wheat or tobacco or arabidopsis or rice or sunflower)

L1 83 RAD5? AND (PLANT OR MAIZE OR WHEAT OR TOBACCO OR ARABIDOPSIS OR RICE OR SUNFLOWER)

=> duplicate remove l1

L2 49 DUPLICATE REMOVE L1 (34 DUPLICATES REMOVED)

=> d ti 1-49

L2 ANSWER 1 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Methods of improving homologous recombination for gene targeting and therapy

L2 ANSWER 2 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Homologous recombination and molecular evolution of recombination protein homologs in plants

L2 ANSWER 3 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Methods of determining individual hypersensitivity to a pharmaceutical agent from gene expression profile

L2 ANSWER 4 OF 49 CABA COPYRIGHT 2001 CABI

TI A RecA homologue in Ustilago maydis that is distinct and evolutionarily distant from **Rad51** actively promotes DNA pairing reactions in the absence of auxiliary factors.

L2 ANSWER 5 OF 49 AGRICOLA DUPLICATE 1

TI **RAD50** function is essential for telomere maintenance in **Arabidopsis**.

L2 ANSWER 6 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 2

TI In vitro and in vivo nucleotide exchange directed by chimeric RNA/DNA oligonucleotides in Saccharomyces cerevisiae.

L2 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 3

TI Homologous recombination in planta is stimulated in the absence of **Rad50**

L2 ANSWER 8 OF 49 AGRICOLA DUPLICATE 4

TI Disruption of the **Arabidopsis RAD50** gene leads to **plant** sterility and MMS sensitivity.

L2 ANSWER 9 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Protein and cDNA sequences of **maize RAD50**-like gene and uses thereof in transgenic plants

L2 ANSWER 10 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Gene **RAD51** recombinase and cDNA of corn and **wheat** and use of **RAD51** in positive selection of recombinant **plant** cells

L2 ANSWER 11 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Protein and cDNA sequences of **maize RAD51**-like gene and uses thereof in transgenic plants

L2 ANSWER 12 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Locked nucleic acid hybrids and their uses in modulating genetic processes

L2 ANSWER 13 OF 49 CAPLUS COPYRIGHT 2001 ACS

TI Small protein SML1 that interacts with yeast ribonucleotide reductase subunit

L2 ANSWER 14 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS

TI The FHA domain mediates phosphoprotein interactions.

L2 ANSWER 15 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 5

TI MUS81 encodes a novel helix-hairpin-helix protein involved in the response

to UV- and methylation-induced DNA damage in *Saccharomyces cerevisiae*.

- L2 ANSWER 16 OF 49 CABA COPYRIGHT 2001 CABI
TI Isolation and biochemical characterization of a new topoisomerase I inhibitor from *Ocotea leucoxydon*.
- L2 ANSWER 17 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 6
TI Elevated UV-B radiation reduces genome stability in plants.
- L2 ANSWER 18 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 7
TI The bacterial replicative helicase DnaB evolved from a RecA duplication.
- L2 ANSWER 19 OF 49 CAPLUS COPYRIGHT 2001 ACS
TI Nucleotide sequences encoding **maize RAD51** recombinases
- L2 ANSWER 20 OF 49 AGRICOLA DUPLICATE 8
TI Three-dimensional microscopy of the **Rad51** recombination protein during meiotic prophase.
- L2 ANSWER 21 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
TI DNA repair in lymphoblastoid cell lines from patients with head and neck cancer.
- L2 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2001 ACS
TI **Plant** responses to genotoxic stress are linked to an ABA/salinity signaling pathway
- L2 ANSWER 23 OF 49 CAPLUS COPYRIGHT 2001 ACS
TI Green fluorescent protein and yeast DNA repair genes in construction of recombinant DNA mol. for detection of DNA-damaging agents
- L2 ANSWER 24 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 9
TI The human REC2/**RAD51B** gene acts as a DNA damage sensor by inducing G1 delay and hypersensitivity to ultraviolet irradiation.
- L2 ANSWER 25 OF 49 AGRICOLA DUPLICATE 10
TI *Agrobacterium tumefaciens* transformation of the radiation hypersensitive **Arabidopsis thaliana** mutants *uvh1* and **rad5**.
- L2 ANSWER 26 OF 49 CAPLUS COPYRIGHT 2001 ACS
TI Identification of a novel human **RAD51** homolog, **RAD51B**. [Erratum to document cited in CA128:201583]
- L2 ANSWER 27 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
TI **Rad51** distribution is altered in *desynaptic2*, a **maize** meiotic mutant that has abnormal chromosome pairing.
- L2 ANSWER 28 OF 49 AGRICOLA DUPLICATE 11
TI Isolation and characterisation of the **RAD51** and DMCI1 homologs from **Arabidopsis thaliana**.
- L2 ANSWER 29 OF 49 AGRICOLA DUPLICATE 12
TI **Arabidopsis thaliana** mutants altered in homologous recombination.
- L2 ANSWER 30 OF 49 CABA COPYRIGHT 2001 CABI
TI Interaction between *Ustilago maydis* REC2 and **RAD51** genes in DNA repair and mitotic recombination.
- L2 ANSWER 31 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 13
TI Isolation and characterization of **rad51** orthologs from *Coprinus cinereus* and *Lycopersicon esculentum*, and phylogenetic analysis of eukaryotic recA homologs.
- L2 ANSWER 32 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
TI Cap-prevented recombination between terminal telomeric repeat arrays (telomere CPR) maintains telomeres in *Kluyveromyces fragilis* lacking telomerase.
- L2 ANSWER 33 OF 49 AGRICOLA DUPLICATE 14
TI Nucleotide sequences of nuclear tRNA(Cys) genes from *Nicotiana glauca* and **Arabidopsis** and expression in HeLa cell extract.
- L2 ANSWER 34 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
TI Using 3-D immunocytology to explore the roles of mismatch binding proteins in meiosis.
- L2 ANSWER 35 OF 49 CAPLUS COPYRIGHT 2001 ACS
TI Identification and expression of the *Neurospora crassa* mei-3 gene which encodes a protein homologous to **Rad51** of *Saccharomyces cerevisiae*

L2 ANSWER 36 OF 49 CAPLUS COPYRIGHT 2001 ACS
 TI Characterization of a mouse recA-like gene specifically expressed in testis

L2 ANSWER 37 OF 49 CAPLUS COPYRIGHT 2001 ACS
 TI Structural analysis of a recA-like gene in the genome of **Arabidopsis thaliana**

L2 ANSWER 38 OF 49 CABA COPYRIGHT 2001 CABI
 TI Structure of REC2, a recombinational repair gene of Ustilago maydis, and its function in homologous recombination between plasmid and chromosomal sequences.

L2 ANSWER 39 OF 49 AGRICOLA DUPLICATE 15
 TI Isolation of **Arabidopsis thaliana** mutants hypersensitive to gamma radiation.

L2 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2001 ACS
 TI Characterization of cDNAs induced in meiotic prophase in lily microsporocytes

L2 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2001 ACS
 TI Stabilization of a yeast artificial chromosome containing **plant** DNA using a recombination-deficient host

L2 ANSWER 42 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Expression of the Saccharomyces cerevisiae PAD50 gene during meiosis: Steady-state transcript levels rise and fall while steady-state protein levels remain constant.

L2 ANSWER 43 OF 49 AGRICOLA DUPLICATE 16
 TI Isolation and characterization of a yeast gene that is homologous with a meiosis-specific cDNA from a **plant**.

L2 ANSWER 44 OF 49 CABA COPYRIGHT 2001 CABI
 TI The use of saccharomycete yeasts to evaluate genetic effects of systemic fungicides.

L2 ANSWER 45 OF 49 AGRICOLA
 TI A Saccharomyces cerevisiae **RAD52** allele expressing a C-terminal truncation protein: activities and intragenic complementation of missense mutations.

L2 ANSWER 46 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Characterization of REC104, a gene required for early meiotic recombination in the yeast Saccharomyces cerevisiae.

L2 ANSWER 47 OF 49 BIOSIS COPYRIGHT 2001 BIOSIS
 TI THE DNA REPAIR GENE PSO3 OF SACCHAROMYCES-CEREVISIAE BELONGS TO THE RAD3 EPISTASIS GROUP.

L2 ANSWER 48 OF 49 AGRICOLA
 TI The rec102 mutant of yeast is defective in meiotic recombination and chromosome synapsis.

L2 ANSWER 49 OF 49 AGRICOLA
 TI Nucleotide sequence of the **RAD57** gene of Saccharomyces cerevisiae.

=> d bib abs 43 37 28 19 22 7-10 2 5

L2 ANSWER 43 OF 49 AGRICOLA DUPLICATE 16
 AN 93:47656 AGRICOLA
 DN IND93029549
 TI Isolation and characterization of a yeast gene that is homologous with a meiosis-specific cDNA from a **plant**.
 AU Kobayashi, T.; Hotta, Y.; Tabata, S.
 CS Nagoya University, Nagoya, Japan
 AV DNAL (442.8 Z34)
 SO M G G : Molecular and general genetics, Feb 1993. Vol. 237, No. 1/2. p. 225-232
 Publisher: Berlin, W. Ger. : Springer International.
 CODEN: MGGEAE; ISSN: 0026-8925
 NTE Includes references.
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English
 AB By using as probe a meiosis-specific cDNA clone LIM15 from the monocotyledonous **plant**, Lilium longiflorum, a clone containing a 2.8 kb DNA fragment was isolated from a genomic library of Saccharomyces

cerevisiae. Primary structure analysis revealed that the clone includes two complete open reading frames, designated ISC2 and ISC10, capable of coding for a 36.6 kDa and a 31.6 kDa polypeptide, respectively, with the former frame being interrupted by a 92 bp intron. The predicted amino acid sequence of Isc2 was 56% identical with the putative gene product of lily cDNA clone LIM15, and showed limited sequence similarity with the yeast **RAD57** gene product. Transcripts of the two genes begin accumulating 2.5 h and 7.5 h after induction of meiosis, respectively, according to a Northern hybridization analysis. Since disruption of either one of these genes had a drastic effect on the ability to form spores, ISC2 and ISC10 are expected to play significant roles in the formation of reproductive cells.

L2 ANSWER 37 OF 49 CAPLUS COPYRIGHT 2001 ACS
AN 1995:631987 CAPLUS
DN 123:221650

TI Structural analysis of a recA-like gene in the genome of **Arabidopsis thaliana**

AU Sato, Shusei; Hotta, Yasuo; Tabata, Satoshi

CS Kazusa DNA Res. Inst., Chiba, 292, Japan

SO DNA Res. (1995), 2(2), 89-93

CODEN: DARSE8; ISSN: 1340-2838

DT Journal

LA English

AB A recA-like gene was identified in the genome of **Arabidopsis thaliana** by means of PCR using primers designed on the basis of previously reported amino acid sequences of eukaryotic RecA-like proteins. The structure of the gene, termed ArLIM15, was investigated by comparing the primary structure of the genomic DNA with that of the corresponding cDNA. The open reading frame, which was split into 15 exons, was established to have the capacity for encoding a 37.3-kDa polypeptide. The amino acid sequence of the putative product of ArLIM15 showed a high degree of similarity to that of LIM15 in the monocotyledonous **plant** *Lilium*, including a 93% identity, and to those of other recA-like genes in yeasts and vertebrates with identities of 69-71%. Phylogenetic anal. indicated ArLIM15 to be much closer to meiosis-specific LIM15 and DMCL1 in *Saccharomyces cerevisiae* than to **RAD51** in *S. cerevisiae* and its homologs on an evolutionary scale.

L2 ANSWER 28 OF 49 AGRICOLA DUPLICATE 11

AN 1998:62619 AGRICOLA

DN IND21241600

TI Isolation and characterisation of the **RAD51** and DMCL1 homologs from **Arabidopsis thaliana**.

AU Doutriaux, M.P.; Couteau, F.; Bergounioux, C.; White, C.

AV DNAL (442.8 Z34)

SO Molecular & general genetics : MGG, Feb 1998. Vol. 257, No. 3. p. 283-291

Publisher: Berlin, Germany : Springer-Verlag Berlin.

CODEN: MGGEAE; ISSN: 0026-8925

NTE Includes references

CY Germany

DT Article

FS Non-U.S. Imprint other than FAO

LA English

L2 ANSWER 19 OF 49 CAPLUS COPYRIGHT 2001 ACS

AN 1999:529275 CAPLUS

DN 131:154494

TI Nucleotide sequences encoding **maize RAD51** recombinases

IN Bowen, Benjamin A.; Chamberlin, Mark A.; Drummond, Bruce J.; McElver, John A.; Rothstein, Rodney J.

PA Pioneer Hi-Bred International, Inc., USA

SO PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9941394	A1	19990819	WO 1999-US2900	19990211
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	AU 9926699	A1	19990830	AU 1999-26699	19990211
	EP 1053339	A1	20001122	EP 1999-906894	19990211
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			

PRAI US 1998-74745 P 19980213
WO 1999-US2900 W 19990211

AB Nucleic acid sequences encoding two **RAD51** recombinases active in **maize** plants are provided. Full-length cDNA sequences from a **maize** tassel cDNA library, including the ZmRAD51 coding sequences and unique 3-untranslated regions which are useful as RFLP probes, are also provided. RFLP mapping indicates that the Zea mays genome contains 2 genes encoding different variants of the ZmRAD51 recombinase enzyme, one mapped to chromosome 7 and the other on chromosome 3. The prodn. of plasmids contg. a nucleic acid sequence encoding a ZmRAD51 fusion protein, as well as the use of the plasmids to introduce the ZmRAD51 coding sequence into a host cell, such as **maize** cell, are also disclosed.

RE.CNT 3

RE

- (1) Smith, K; EMBL Sequence Data Library 1996
- (2) William, G; WO 9741228 A 1997 CAPLUS
- (3) Yeager Stassen, N; Current Genetics 1996

L2 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2001 ACS

AN 1999:141888 CAPLUS

DN 130:309109

TI **Plant** responses to genotoxic stress are linked to an ABA/salinity signaling pathway

AU Albinsky, Doris; Masson, Jean E.; Bogucki, Augustyn; Afsar, Karin; Vass, Imre; Nagy, Ferenc; Paszkowski, Jerzy

CS Friedrich Miescher-Institute, Basel, CH-4002, Switz.

SO Plant J. (1999), 17(1), 73-82

CODEN: PLJUED; ISSN: 0960-7412

PB Blackwell Science Ltd.

DT Journal

LA English

AB An **Arabidopsis** mutant (uvs66) is described that appears to be affected in the perception of signals triggered by genotoxic treatments. The mutant uvs66 was identified as hypersensitive to UV-C and to the DNA-damaging chems. Me methane sulfonate (MMS) and mitomycin C (MMC), but seems to perform light dependent repair, nucleotide excision repair and homologous recombinational repair as efficiently as the wild type. Exposure of uvs66 plants to various environmental stresses revealed a normal response, with the exception of elevated salinity and abscisic acid (ABA). The hypersensitivity to NaCl and ABA is correlated with aberrant regulation of transcripts that are regulated by ABA (RAB18), or are induced by DNA damaging treatments (AtrAD51). The properties of the mutant uvs66 suggest an unexpected link between ABA and/or salt stress mediated signals and genotoxic stress responses, and provide an important connection between the physiol. and genetic responses of plants to abiotic stress factors.

RE.CNT 53

RE

- (1) Aro, E; Biochem Biophys Acta 1993, V1143, P113 CAPLUS
- (2) Basile, G; Mol Cell Biol 1992, V12, P3235 CAPLUS
- (3) Baur, M; Mol Cell Biol 1990, V10, P492 CAPLUS
- (5) Bohnert, H; Plant Cell 1995, V7, P1099 CAPLUS
- (6) Bostock, R; Plant Physiol 1992, V98, P1356 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 3

AN 2001:464972 CAPLUS

TI Homologous recombination in planta is stimulated in the absence of **Rad50**

AU Gherbi, Hassen; Gallego, Maria Eugenia; Jalut, Nicole; Lucht, Jan M.; Hohn, Barbara; White, Charles I.

CS UMR 6547 BIOMOVE, Universite Blaise Pascal, Aubiere, 63177, Fr.

SO EMBO Rep. (2001), 2(4), 287-291

CODEN: ERMEAX; ISSN: 1469-221X

PB Oxford University Press

DT Journal

LA English

AB Chromosomal double-strand DNA breaks must be repaired; in the absence of repair the resulting acentrometric (and telomereless) fragments may be lost and/or the broken DNA ends may recombine causing general chromosomal instability. The **Rad50**/Mrell/Xrs2 protein complex acts at DNA ends and is implicated in both homologous and non-homologous recombination. We have isolated a **rad50** mutant of the **plant Arabidopsis thaliana** and show here that it has a somatic hyper-recombination phenotype in planta. This finding supports the hypothesis of a competition between homologous and illegitimate recombination in higher eukaryotes. To our knowledge, this is the first direct in vivo support for the role of this complex in chromosomal recombination in a multicellular organism and the first description of a mutation of a known gene leading to hyper-recombination in plants.

RE.CNT 28

RE

- (1) Berthold, D; Plant Mol Biol Rep 1993, V11, P338 CAPLUS
(4) Critchlow, S; Trends Biochem Sci 1998, V23, P394 CAPLUS
(5) Gallego, M; Plant J 2001, V25, P31 CAPLUS
(7) Gottlieb, S; Proc Natl Acad Sci USA 1989, V86, P7072 CAPLUS
(8) Haber, J; Nature 1999, V398, P665 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 49 AGRICOLA DUPLICATE 4
AN 2001:37560 AGRICOLA
DN IND22438193
TI Disruption of the **Arabidopsis RAD50** gene leads to
plant sterility and MMS sensitivity.
AU Gallego, M.E.; Jeanneau, M.; Granier, F.; Bouchez, D.; Bechtold, N.;
White, C.I.
AV DNAL (QK710.P68)
SO The Plant journal : for cell and molecular biology, Jan 2001. Vol. 25, No.
1. p. 31-41
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412
NTE Includes references
CY England; United Kingdom
DT Article
FS Non-U.S. Imprint other than FAO
LA English
AB The **Rad50** protein is involved in the cellular response to
DNA-double strand breaks (DSBs), including the detection of damage,
activation of cell-cycle checkpoints, and DSB repair via recombination. It
is essential for meiosis in yeast, is involved in telomere maintenance,
and is essential for cellular viability in mice. Here we present the
isolation, sequence and characterization of the **Arabidopsis**
thaliana RAD50 homologue (AtRAD50) and an **Arabidopsis**
mutant of this gene. A single copy of this gene is present in the
Arabidopsis genome, located on chromosome II. Northern analysis
shows a single 4.3 Kb mRNA species in all **plant** tissues tested,
which is strongly enriched in flowers and other tissues with many dividing
cells. The predicted protein presents strong conservation with the other
known **Rad50** homologues of the amino- and carboxy-terminal
regions. Mutant plants present a sterility phenotype which co-segregates
with the T-DNA insertion. Molecular analysis of the mutant plants shows
that the sterility phenotype is present only in the plants homozygous for
the T-DNA insertion. An in vitro mutant cell line, derived from the mutant
plant, shows a clear hypersensitivity to the DNA-damaging agent
methylmethane sulphonate, suggesting a role of **RAD50** in
double-strand break repair in **plant** cells. This is the first
report of a **plant** mutated in a protein of the **Rad50**
-Mrell-Xrs2 complex, as well as the first data suggesting the involvement
of the **Rad50** homologue protein in meiosis and DNA repair in
plants.

L2 ANSWER 9 OF 49 CAPLUS COPYRIGHT 2001 ACS
AN 2000:814642 CAPLUS
DN 134:1355
TI Protein and cDNA sequences of **maize RAD50**-like gene
and uses thereof in transgenic plants
IN Mahajan, Pramod B.; Shi, Jinrui
PA Pioneer Hi-Bred International, Inc., USA
SO PCT Int. Appl., 78 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000068404	A1	20001116	WO 2000-US11086	20000425
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	EP 1093523	A1	20010425	EP 2000-931950	20000425
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
PRAI	US 1999-132575	P	19990505		
	WO 2000-US11086	W	20000425		
AB	The invention provides protein and cDNA sequences of a novel maize ortholog of RAD50 , which shows high homol. to the yeast RAD50 gene. The present invention provides methods and compns.				

relating to altering **maize RAD50** levels in plants.

The invention further provides recombinant expression cassettes, host cells, transgenic plants, and antibody compns.

RE.CNT 2

RE

(1) Genelabs Tech Inc; WO 9838306 A 1998 CAPLUS

(2) Petrini, J; American Journal of Human Genetics 1999, V64, P1264 CAPLUS

L2 ANSWER 10 OF 49 CAPLUS COPYRIGHT 2001 ACS

AN 2000:814630 CAPLUS

DN 133:360459

TI Gene **RAD51** recombinase and cDNA of corn and **wheat** and use of **RAD51** in positive selection of recombinant **plant** cells

IN Famodu, Omolayo O.; Morgante, Michele

PA E.I. du Pont de Nemours and Company, USA

SO PCT Int. Appl., 46 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000068390	A2	20001116	WO 2000-US12587	20000509
	WO 2000068390	A3	20010503		
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRAI US 1999-133438 P 19990511

AB This invention relates to cDNAs encoding corn and **wheat** gene

RAD51 recombinases. The invention also relates to the construction of a chimeric gene encoding all or a substantial portion of the recombination protein, in sense or antisense orientation, wherein expression of the chimeric gene results in prodn. of altered levels of the recombination protein in a transformed host cell. Also disclosed is use of the chimeric gene for pos. selection of transformed **plant** cells.

L2 ANSWER 2 OF 49 CAPLUS COPYRIGHT 2001 ACS

AN 2001:397024 CAPLUS

DN 135:1212

TI Homologous recombination and molecular evolution of recombination protein homologs in plants

IN Lassner, Michael; Delcardayre, Steven

PA Maxygen, Inc., USA

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038504	A2	20010531	WO 2000-US32289	20001122
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRAI US 1999-167450 P 19991123

AB Methods for evolving recombinase protein homologs and RecA/VirE2 fusion proteins which complement VirE2 deficient Agrobacterium are provided. The use of recombinase protein homologs and RecA/VirE2 fusion proteins in the context of Agrobacterium-mediated transformation are provided. Methods for producing transgenic organisms by homologous recombination using evolved recombinase proteins and Agrobacterium strains which express recombinase protein homologs or RecA/VirE2 fusion proteins are provided. Transgenic cells and organisms which have integrated an exogenous DNA sequence into a predetd. site in their genome are provided.

L2 ANSWER 5 OF 49 AGRICOLA

DUPLICATE 1

AN 2001:31834 AGRICOLA

DN IND22435110

TI **RAD50** function is essential for telomere maintenance in **Arabidopsis**.
 AU Gallego, M.E.; White, C.I.
 AV DNAL (500 N21P)
 SO Proceedings of the National Academy of Sciences of the United States of America, Feb 13, 2001. Vol. 98, No. 4. p. 1711-1716
 Publisher: Washington, D.C. : National Academy of Sciences,
 CODEN: PNASA6; ISSN: 0027-8424
 NTE Includes references
 CY District of Columbia; United States
 DT Article; Conference
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English

=> s (DNA repair) and transform? and (plant or maize or wheat or tobacco or arabidopsis or rice or sunflower)

L3 132 (DNA REPAIR) AND TRANSFORM? AND (PLANT OR MAIZE OR WHEAT OR
 TOBACCO OR ARABIDOPSIS OR RICE OR SUNFLOWER)

=> duplicate remove l3

DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, CAPLUS, CABA'
 KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L3

L4 84 DUPLICATE REMOVE L3 (48 DUPLICATES REMOVED)

=> d ti 1-10

L4 ANSWER 1 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Methods and uses thereof for generating hypermutable yeast for mutagenesis

L4 ANSWER 2 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Blockade of mismatch **DNA repair** in plants and the
 generation of hypermutable strains for **plant** breeding

L4 ANSWER 3 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Methods of determining individual hypersensitivity to a pharmaceutical
 agent from gene expression profile

L4 ANSWER 4 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Cell-free assay for **plant** gene targeting and conversion

L4 ANSWER 5 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Protein and cDNA sequences of **maize** retinoblastoma-associated-
 like proteins (MSI-like) and uses thereof in enhancing **plant**
 disease resistance

L4 ANSWER 6 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Uncoupling of 3'-phosphatase and 5'-kinase functions in budding yeast.
 Characterization of *Saccharomyces cerevisiae* DNA 3'-phosphatase (TPP1)

L4 ANSWER 7 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Mechanisms of N-acetylcysteine in the prevention of DNA damage and cancer,
 with special reference to smoking-related end-points

L4 ANSWER 8 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 1
 TI **Arabidopsis** UVH3 gene is a homolog of the *Saccharomyces*
cerevisiae RAD2 and human XPG **DNA repair** genes.

L4 ANSWER 9 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Transcriptional activator nucleic acids and polypeptides from plants

L4 ANSWER 10 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI sequence of **Maize** replication protein a large and middle
 subunits with applications for modulation of cell cycle in both dicots and
 monocots

=> d ti 11-20

L4 ANSWER 11 OF 84 CABA COPYRIGHT 2001 CABI
 TI UV-damage-mediated induction of homologous recombination in
Arabidopsis is dependent on photosynthetically active radiation.

L4 ANSWER 12 OF 84 AGRICOLA DUPLICATE 2
 TI RecA stimulates sister chromatid exchange and the fidelity of
 double-strand break repair, but not gene targeting, in plants
transformed by *Agrobacterium*.

- L4 ANSWER 13 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 3
 TI Competence of **Arabidopsis** thaliana genotypes and mutants for Agrobacterium tumefaciens-mediated gene transfer: Role of phytohormones.
- L4 ANSWER 14 OF 84 CABA COPYRIGHT 2001 CABI
 TI The C termini of **Arabidopsis** cryptochromes mediate a constitutive light response.
- L4 ANSWER 15 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS
 TI Factors affecting **transformation** of Agrobacterium tumefaciens and their application on cereals.
- L4 ANSWER 16 OF 84 AGRICOLA
 TI The **Arabidopsis** UVH1 gene is a homolog of the yeast repair endonuclease RAD1.
- L4 ANSWER 17 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 4
 TI Repair of UV damage in plants by nucleotide excision repair: **Arabidopsis** UVH1 **DNA repair** gene is a homolog of Saccharomyces cerevisiae Rad1.
- L4 ANSWER 18 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Genetic polymorphism in hOGG1 and susceptibility to esophageal cancer in Chinese
- L4 ANSWER 19 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Hijacking oocyte **DNA repair** machinery in transgenesis?
- L4 ANSWER 20 OF 84 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 5
 TI Integration of T-DNA into **plant** genomes: prototype and realities

=> d bib abs 12

- L4 ANSWER 12 OF 84 AGRICOLA DUPLICATE 2
 AN 2000:66747 AGRICOLA
 DN IND22063096
 TI RecA stimulates sister chromatid exchange and the fidelity of double-strand break repair, but not gene targeting, in plants **transformed** by Agrobacterium.
- AU Reiss, B.; Schubert, I.; Kopchen, K.; Wendeler, E.; Schell, J.; Puchta, H.
 AV DNAL (500 N21P)
 SO Proceedings of the National Academy of Sciences of the United States of America, Mar 28, 2000. Vol. 97, No. 7. p. 3358-3363
 Publisher: Washington, D.C. : National Academy of Sciences, CODEN: PNASA6; ISSN: 0027-8424
- NTE Includes references
 CY District of Columbia; United States
 DT Article; Conference
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English
 AB Expression of the bacterial RecA protein in plants stimulates homologous recombination in **tobacco**. Here we show that RecA plays a direct role in DNA strand exchange in vivo. The number of sister chromatid exchanges (SCEs) was increased 2.4-fold over wild type in transgenic **tobacco** plants expressing a nuclear-targeted RecA (nt-RecA) protein and could not be increased further by DNA damage, which caused a doubling of the baseline SCE frequency in wild-type plants. Although gene targeting requires homologous recombination, the number of targeted gene replacements was not increased markedly by the presence of nt-RecA by using Agrobacterium-mediated **transformation**. However, the number of double-strand breaks that were repaired at both sides by homologous recombination was increased 3.3-fold. Stimulation of SCE and fidelity of double-strand break repair by nt-RecA, but not by gene targeting, suggests that the stimulatory activity of RecA is linked to active DNA synthesis. Therefore, nascent replication-associated single strands may be a prerequisite for RecA action in **plant** cells.

=> d ti 21-30

- L4 ANSWER 21 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 6
 TI Prevention of cancer and other chronic diseases worldwide based on sound mechanisms.
- L4 ANSWER 22 OF 84 CAPLUS COPYRIGHT 2001 ACS
 TI Genetic instability and oral cancer
- L4 ANSWER 23 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI Solid phase selection of differentially expressed genes by competitive hybridization with reference DNA cloned on microparticles

L4 ANSWER 24 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI A method of increasing nucleic acid synthesis with ultrasound

L4 ANSWER 25 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 7

TI Double-strand break-induced recombination between ectopic homologous sequences in somatic **plant** cells.

L4 ANSWER 26 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI Radiation-sensitive **Arabidopsis** mutants are proficient for T-DNA **transformation**. [Erratum to document cited in CA131:209759]

L4 ANSWER 27 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 8

TI Radiation-sensitive **Arabidopsis** mutants are proficient for T-DNA **transformation**.

L4 ANSWER 28 OF 84 AGRICOLA DUPLICATE 9

TI Molecular characterization of **transforming** plasmid rearrangements in transgenic **rice** reveals a recombination hotspot in the CaMV 35S promoter and confirms the predominance of microhomology mediated recombination.

L4 ANSWER 29 OF 84 AGRICOLA

TI Cryptochrome 1 controls tomato development in response to blue light.

L4 ANSWER 30 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI Horizontal gene transfers in the environment: natural **transformation** as a putative process for gene transfers between transgenic plants and microorganisms

=> d ti 31-40

L4 ANSWER 31 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI Frequent allelic loss at chromosome 3p distinct from genetic alterations of the 8-oxoguanine DNA glycosylase 1 gene in head and neck cancer

L4 ANSWER 32 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS

TI **DNA repair** in lymphoblastoid cell lines from patients with head and neck cancer.

L4 ANSWER 33 OF 84 AGRICOLA DUPLICATE 10

TI Generation of DNA double-strand breaks and inhibition of somatic embryogenesis by tungsten microparticles in **wheat**.

L4 ANSWER 34 OF 84 CABA COPYRIGHT 2001 CABI

TI Class II DNA photolyase from **Arabidopsis** thaliana contains FAD as a cofactor.

L4 ANSWER 35 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS

TI Antimutagens, anticarcinogens, and effective worldwide cancer prevention.

L4 ANSWER 36 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI In situ modification of **plant** genes for improved herbicide resistance

L4 ANSWER 37 OF 84 CAPLUS COPYRIGHT 2001 ACS

TI Green fluorescent protein and yeast **DNA repair** genes in construction of recombinant DNA mol. for detection of DNA-damaging agents

L4 ANSWER 38 OF 84 AGRICOLA DUPLICATE 11

TI Capture of genomic and T-DNA sequences during double-strand break repair in somatic **plant** cells.

L4 ANSWER 39 OF 84 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 12

TI Repair of genomic double-strand breaks in somatic **plant** cells by one-sided invasion of homologous sequences

L4 ANSWER 40 OF 84 CABA COPYRIGHT 2001 CABI

TI The involvement of poly(ADP-ribose) polymerase in the oxidative stress responses in plants.

=> d 41-50

L4 ANSWER 41 OF 84 CAPLUS COPYRIGHT 2001 ACS

AN 1997:205241 CAPLUS

DN 126:196112
 TI Eukaryote mismatch **DNA repair** system inactivation by
 gene disruption to allow exogenous diverse DNA introduction with
 homologous recombination
 IN Te Riele, Henricus Petrus Josep; De Wind, Niels; Dekker-Vlaar, Helena
 Maria Joha
 PA Setratech, Fr.; Te Riele, Henricus, Petrus, Joseph; De Wind, Niels;
 Dekker-Vlaar, Helena, Maria, Johanna
 SO PCT Int. Appl., 47 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9705268	A1	19970213	WO 1995-EP2980	19950726
	W: AU, BR, CA, CN, JP, KR, MX, NO, NZ, RU, SE, SG, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,				
	BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9647849	A1	19970226	AU 1996-47849	19950726
	EP 842289	A1	19980520	EP 1995-944705	19950726
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
PRAI	WO 1995-EP2980		19950726		

L4 ANSWER 42 OF 84 AGRICOLA DUPLICATE 13
 AN 1998:87401 AGRICOLA
 DN IND21813474
 TI Non-homologous DNA end joining in **plant** cells is associated with
 deletions and filler DNA insertions.
 AU Gorbunova, V.; Levy, A.A.
 CS Weizmann Institute of Science, Rehovot, Israel.
 AV DNAL (QD341.A2N8)
 SO Nucleic acids research, Nov 15, 1997. Vol. 25, No. 22. p. 4650-4657
 Publisher: Oxford : Oxford University Press.
 CODEN: NARHAD; ISSN: 0305-1048
 NTE Includes references
 CY England; United Kingdom
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English

L4 ANSWER 43 OF 84 AGRICOLA
 AN 1998:48075 AGRICOLA
 DN IND21240942
 TI The chloroplast-located homolog of bacterial DNA recombinase.
 AU Cao, J.; Combs, C.; Jagendorf, A.T.
 AV DNAL (450 P699)
 SO Plant and cell physiology, Dec 1997. Vol. 38, No. 12. p. 1319-1325
 Publisher: Kyoto, Japan : Japanese Society of Plant Physiologists.
 CODEN: PCPHA5; ISSN: 0032-0781
 NTE Includes references
 CY Japan
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English

L4 ANSWER 44 OF 84 BIOSIS COPYRIGHT 2001 BIOSIS DUPLICATE 14
 AN 1998:143548 BIOSIS
 DN PREV199800143548
 TI Genotoxin resistance properties of transgenic **tobacco** plants
 expressing bacteriophage T4 DenV and Saccharomyces cerevisiae Apn1
 proteins.
 AU Lapointe, Gilles; Winchcombe-Forhan, Charlene; Evans, David H. (1)
 CS (1) Dep. Mol. Biol. and Genet., Univ. Guelph, Guelph, ON N1G 2W1 Canada
 SO Biochemistry and Cell Biology, (1997) Vol. 75, No. 4, pp. 435-443.
 ISSN: 0829-8211.
 DT Article
 LA English
 SL English; French

L4 ANSWER 45 OF 84 CABA COPYRIGHT 2001 CABI
 AN 97:146063 CABA
 DN 971007162
 TI Interaction between Ustilago maydis REC2 and RAD51 genes in **DNA**
repair and mitotic recombination
 AU Ferguson, D. O.; Rice, M. C.; Rendi, M. H.; Kotani, H.; Kmiec, E. B.;
 Holloman, W. K.
 CS Hearst Microbiology Research Center, Department of Microbiology, Box 62,
 Cornell University Medical College, 1300 York Ave., New York, NY 10021,
 USA.
 SO Genetics, (1997) Vol. 145, No. 2, pp. 243-251. 42 ref.
 ISSN: 0016-6731

DT Journal
LA English

L4 ANSWER 46 OF 84 AGRICOLA
AN 97:45197 AGRICOLA
DN IND20573313
TI An enzyme similar to animal type II photolyases mediates photoreactivation in **Arabidopsis**.
AU Ahmad, M.; Jarillo, J.A.; Klimczak, L.J.; Landry, L.G.; Peng, T.; Last, R.L.; Cashmore, A.R.
CS University of Pennsylvania, Philadelphia.
SO The Plant cell, Feb 1997. Vol. 9, No. 2. p. 199-207
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
CODEN: PLCEEW; ISSN: 1040-4651
NTE Includes references
CY Maryland; United States
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English

L4 ANSWER 47 OF 84 CAPLUS COPYRIGHT 2001 ACS
AN 1997:531364 CAPLUS
DN 127:172492
TI **Tobacco** cotyledons: a novel system for testing mutagenicity in plants
AU Baburek, Ivan; Stiburkova, Blanka; Levy, Avi; Angelis, Karel J.
CS Institute of Experimental Botany, Prague, 160 00/6, Czech Rep.
SO Environ. Mol. Mutagen. (1997), 30(1), 91-93
CODEN: EMMUEG; ISSN: 0893-6692
PB Wiley-Liss
DT Journal
LA English

L4 ANSWER 48 OF 84 CAPLUS COPYRIGHT 2001 ACS
AN 1998:423489 CAPLUS
DN 129:183703
TI Multiple mechanisms of cancer prevention by phytochemicals: interaction between cellular proliferation and endogenous mutagens
AU Cooney, Robert V.; Mordan, Lawrence J.; Franke, Adrian
CS Cancer Research Center of Hawaii, University of Hawaii, Honolulu, HI, 96813, USA
SO Food Factors Cancer Prev., [Int. Conf.] (1997), Meeting Date 1995, 26-29. Editor(s): Ohigashi, Hajime. Publisher: Springer, Tokyo, Japan.
CODEN: 66HYAL
DT Conference; General Review
LA English

L4 ANSWER 49 OF 84 AGRICOLA DUPLICATE 15
AN 96:41917 AGRICOLA
DN IND20521952
TI Two different but related mechanisms are used in plants for the repair of genomic double-strand breaks by homologous recombination.
AU Puchta, H.; Dujon, B.; Hohn, B.
CS Friedrich Miescher-Institut, Basel, Switzerland.
AV DNAL (500 N21P)
SO Proceedings of the National Academy of Sciences of the United States of America, May 14, 1996. Vol. 93, No. 10. p. 5055-5060
Publisher: Washington, D.C. : National Academy of Sciences, CODEN: PNASA6; ISSN: 0027-8424
NTE Includes references
CY District of Columbia; United States
DT Article; Conference
FS U.S. Imprints not USDA, Experiment or Extension
LA English

L4 ANSWER 50 OF 84 AGRICOLA DUPLICATE 16
AN 96:33730 AGRICOLA
DN IND20514662
TI RecA protein stimulates homologous recombination in plants.
AU Reiss, B.; Klemm, M.; Kosak, H.; Schell, J.
CS Max-Planck-Institut fur Zuchtforschung, Cologne, Germany.
AV DNAL (500 N21P)
SO Proceedings of the National Academy of Sciences of the United States of America, Apr 2, 1996. Vol. 93, No. 7. p. 3094-3098
Publisher: Washington, D.C. : National Academy of Sciences, CODEN: PNASA6; ISSN: 0027-8424
NTE Includes references
CY District of Columbia; United States
DT Article; Conference
FS U.S. Imprints not USDA, Experiment or Extension
LA English

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CSTN INTERNATIONAL SESSION SUSPENDED AT 08:35:41 ON 22 OCT 2001

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=> file agricola biosis caplus caba

=> s rad?

L1 2770253 RAD?

=> s rad51?

L2 1649 RAD51?

=> s l2 and (maize or plant or wheat or rice or arabidopsis or review)

L3 149 L2 AND (MAIZE OR PLANT OR WHEAT OR RICE OR ARABIDOPSIS OR REVIEW)
W)

=> duplicate remove l3

L4 120 DUPLICATE REMOVE L3 (29 DUPLICATES REMOVED)

=> d ti 1-50

L4 ANSWER 1 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Replicative in vivo gene targeting

L4 ANSWER 2 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Modulation of meiotic homologous recombination between non-sister chromatids in meiosis

L4 ANSWER 3 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Methods for enhancing targeted gene alteration in cells having altered activity of DNA repair proteins using chimeric RNA-DNA double-stranded hairpin oligonucleotides

L4 ANSWER 4 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Composition and method for increased meiotic recombination in plants using DNA repair proteins

L4 ANSWER 5 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Cis-acting DNA damage-responsive elements of **Arabidopsis thaliana RAD51** gene promoter

L4 ANSWER 6 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

TI Homologous repair of DNA damage and tumorigenesis: The BRCA connection.

L4 ANSWER 7 OF 120 AGRICOLA DUPLICATE 1

TI The organization of *Physcomitrella patens* **RAD51** genes is unique among eukaryotic organisms.

L4 ANSWER 8 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. DUPLICATE 2

TI DNA double-strand break repair signalling: The case of **RAD51** post-translational regulation.

L4 ANSWER 9 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Recombination functions of replication protein A

L4 ANSWER 10 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

TI BRCA2 homolog required for proficiency in DNA repair, recombination, and genome stability in *Ustilago maydis*.

L4 ANSWER 11 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Telomere maintenance without telomerase

L4 ANSWER 12 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Homologous recombination induced by replication inhibition, is stimulated by expression of mutant p53

L4 ANSWER 13 OF 120 CAPLUS COPYRIGHT 2003 ACS

TI Two **rice** DMC1 genes are differentially expressed during meiosis and during haploid and diploid mitosis

L4 ANSWER 14 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

DUPLICATE 3
 TI The role of DNA repair in nitrogen mustard drug resistance.

L4 ANSWER 15 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 4
 TI Molecular cloning and characterization of **Rad51**-like genes from **Arabidopsis thaliana**.

L4 ANSWER 16 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 5
 TI Recombinational DNA repair and human disease.

L4 ANSWER 17 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Homologous chromosome associations and nuclear order in meiotic and mitotically dividing cells of budding yeast

L4 ANSWER 18 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 6
 TI Characterization of two highly similar **Rad51** homologs of *Physcomitrella patens*.

L4 ANSWER 19 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Antisense-augmented radiotherapy of malignant gliomas

L4 ANSWER 20 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Distinct functions of BRCA1 and BRCA2 in double-strand break repair

L4 ANSWER 21 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Methods of improving homologous recombination for gene targeting and therapy

L4 ANSWER 22 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Homologous recombination and molecular evolution of recombination protein homologs in plants

L4 ANSWER 23 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Methods of determining individual hypersensitivity to a pharmaceutical agent from gene expression profile

L4 ANSWER 24 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Homologous genetic recombination as an intrinsic dynamic property of a DNA structure induced by RecA/**Rad51**-family proteins: a possible advantage of DNA over RNA as genomic material

L4 ANSWER 25 OF 120 AGRICOLA DUPLICATE 7
 TI Assembly of RecA-like recombinases: distinct roles for mediator proteins in mitosis and meiosis.

L4 ANSWER 26 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 TI Homologous DNA recombination in vertebrate cells.

L4 ANSWER 27 OF 120 CABA COPYRIGHT 2003 CABI
 TI A RecA homologue in *Ustilago maydis* that is distinct and evolutionarily distant from **Rad51** actively promotes DNA pairing reactions in the absence of auxiliary factors.

L4 ANSWER 28 OF 120 CABA COPYRIGHT 2003 CABI
 TI Disruptions of the *Ustilago maydis* REC2 gene identify a protein domain important in directing recombinational repair of DNA.

L4 ANSWER 29 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Human DNA repair genes

L4 ANSWER 30 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Homologous DNA recombination is essential for the proliferation of vertebrate cells

L4 ANSWER 31 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI How to characterize meiotic functions in plants?

L4 ANSWER 32 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Analyses of *recA*/**Rad51**-like gene deficient mice

L4 ANSWER 33 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI DNA homologous recombination and recombinational repair mediated by RecA/**Rad51** family proteins

L4 ANSWER 34 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Chromosome stability, DNA recombination and the BRCA2 tumor suppressor

L4 ANSWER 35 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI BRCA2 and homologous recombination

L4 ANSWER 36 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI The MRE11-RAD50 complex: Diverse functions in the cellular DNA damage response

L4 ANSWER 37 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 8
 TI Homologous recombinational repair of DNA ensures mammalian chromosome stability.

L4 ANSWER 38 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 9
 TI The **Rad51** and Dmcl recombinases: A non-identical twin relationship.

L4 ANSWER 39 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 10
 TI Clinical management of women with genomic BRCA1 and BRCA2 mutations.

L4 ANSWER 40 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI DNA repair system and higher order nuclear architecture

L4 ANSWER 41 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Interactions between BRCA Proteins and DNA Structure

L4 ANSWER 42 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Meiosis and genetic recombination: from asexual reproduction to sexual reproduction

L4 ANSWER 43 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI DNA repair in mammalian cells: mechanisms homologous recombination

L4 ANSWER 44 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Gene **RAD51** recombinase and cDNA of corn and **wheat** and use of **RAD51** in positive selection of recombinant **plant** cells

L4 ANSWER 45 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Protein and cDNA sequences of **maize RAD51**-like gene and uses thereof in transgenic plants

L4 ANSWER 46 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Locked nucleic acid hybrids and their uses in modulating genetic processes

L4 ANSWER 47 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Roles of BRCA1 and its interacting proteins

L4 ANSWER 48 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Tailed duplex DNA is the preferred substrate for **Rad51** protein-mediated homologous pairing

L4 ANSWER 49 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Arrest, adaptation, and recovery following a chromosome double-strand break in *Saccharomyces cerevisiae*

L4 ANSWER 50 OF 120 CAPLUS COPYRIGHT 2003 ACS
 TI Analysis of target recombination genes in the mechanism of DNA homologous recombination: a genome preservation

=> d bib abs 38 44 22 13 15

L4 ANSWER 38 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 DUPLICATE 9
 AN 2002:614682 BIOSIS
 DN PREV200200614682
 TI The **Rad51** and Dmcl recombinases: A non-identical twin relationship.
 AU Masson, Jean-Yves (1); West, Stephen C. (1)
 CS (1) Imperial Cancer Research Fund, Clare Hall Laboratories, South Mimms, Herts, EN6 3LD: s.west@icrf.icnet.uk UK
 SO Trends in Biochemical Sciences, (February, 2001) Vol. 26, No. 2, pp. 131-136. <http://journals.bmn.com/journals/list/latest?jcode=tibs>. print. ISSN: 0968-0004.
 DT General Review
 LA English
 AB A double-strand break in genomic DNA that remains unrepaired can be lethal for a cell. Indeed, the integrity of the genome is paramount for survival. It is therefore surprising that some cells deliberately introduce double-strand breaks at certain times during their life cycle. Why might they do this? What are the benefits? How are these breaks repaired? The

answers to these questions lie in understanding the basis of meiotic recombination, the process that leads to genetic variation. This **review** summarizes the key roles played by the two recombinases, Dmcl and **Rad51**, in the faithful repair of DNA breaks.

L4 ANSWER 44 OF 120 CAPLUS COPYRIGHT 2003 ACS
 AN 2000:814630 CAPLUS
 DN 133:360459
 TI Gene **RAD51** recombinase and cDNA of corn and **wheat** and use of **RAD51** in positive selection of recombinant **plant** cells
 IN Famodu, Omolayo O.; Morgante, Michele
 PA E.I. du Pont de Nemours and Company, USA
 SO PCT Int. Appl., 46 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000068390	A2	20001116	WO 2000-US12587	20000509
	WO 2000068390	A3	20010503		
	W:		AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	US 2002152497	A1	20021017	US 2002-78929	20020219
PRAI	US 1999-133438P	P	19990511		
	US 1999-133038P	P	19990507		
	US 1999-133042P	P	19990507		
	US 1999-133427P	P	19990511		
	US 1999-133428P	P	19990511		
	US 1999-133436P	P	19990511		
	US 1999-133437P	P	19990511		
	US 1999-137667P	P	19990604		
	US 2000-566394	A3	20000505		

AB This invention relates to cDNAs encoding corn and **wheat** gene **RAD51** recombinases. The invention also relates to the construction of a chimeric gene encoding all or a substantial portion of the recombination protein, in sense or antisense orientation, wherein expression of the chimeric gene results in prodn. of altered levels of the recombination protein in a transformed host cell. Also disclosed is use of the chimeric gene for pos. selection of transformed **plant** cells.

L4 ANSWER 22 OF 120 CAPLUS COPYRIGHT 2003 ACS
 AN 2001:397024 CAPLUS
 DN 135:1212
 TI Homologous recombination and molecular evolution of recombination protein homologs in plants
 IN Lassner, Michael; Delcardayre, Steven
 PA Maxygen, Inc., USA
 SO PCT Int. Appl., 57 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038504	A2	20010531	WO 2000-US32289	20001122
	WO 2001038504	A3	20020124		
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		

PRAI US 1999-167450P P 19991123
 AB Methods for evolving recombinase protein homologs and RecA/VirE2 fusion proteins which complement VirE2 deficient Agrobacterium are provided. The use of recombinase protein homologs and RecA/VirE2 fusion proteins in the context of Agrobacterium-mediated transformation are provided. Methods for producing transgenic organisms by homologous recombination using evolved recombinase proteins and Agrobacterium strains which express

recombinase protein homologs or RecA/VirE2 fusion proteins are provided. Transgenic cells and organisms which have integrated an exogenous DNA sequence into a predetd. site in their genome are provided.

L4 ANSWER 13 OF 120 CAPLUS COPYRIGHT 2003 ACS
AN 2002:243417 CAPLUS
DN 137:258167
TI Two **rice** DMC1 genes are differentially expressed during meiosis and during haploid and diploid mitosis
AU Kathiresan, Arumugam; Khush, Gurdev S.; Bennett, John
CS Plant Breeding, Genetics and Biochemistry Division, International Rice Research Institute, Metro Manila, Philippines
SO Sexual Plant Reproduction (2002), 14(5), 257-267
CODEN: SPLRE7; ISSN: 0934-0882
PB Springer-Verlag
DT Journal
LA English
AB We have cloned two **rice** homologues of yeast DMC1, a meiosis-specific gene required for recombination between homologous chromosomes. We show that **rice** DMC1A and DMC1B were produced by a gene duplication event that occurred after **rice** sepd. from the common ancestor of the cereals. The predicted proteins contain 344 amino acids, of which all but 7 are conserved between the two homologues. Between bases -1 and -245, the two promoters share six invariant blocks of sequence of 10-28 bp, interspersed in variable sequences. Both DMC1A and DMC1B are expressed in pollen mother cells coincident with meiosis, and in diploid non-meiotic tissues such as calli and root tips. DMC1B is also expressed in haploid male gametophytes during pollen maturation and in diploid zygotic embryos and endosperm after pollination. These data suggest that DMC1B, either alone or in combination with DMC1A, contributes to recombination during meiosis and during haploid and diploid mitosis.
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 120 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 4
AN 2002:451682 BIOSIS
DN PREV200200451682
TI Molecular cloning and characterization of **RAD51**-like genes from **Arabidopsis** thaliana.
AU Osakabe, Keishi; Yoshioka, Toji; Ichikawa, Hiroaki; Toki, Seiichi (1)
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AB Homologous recombination is an essential process for the maintenance and variability of the genome. In eukaryotes, the Rad52 epistasis group proteins serve the main role for meiotic recombination and/or homologous recombinational repair. **Rad51**-like proteins, such as Rad55 and Rad57 in yeast, play a role in assembly or stabilization of multimeric **Rad51** that promotes homologous pairing and strand exchange reactions. We cloned two **RAD51**-like genes named AtXRCC3 and AtRAD51C from **Arabidopsis** thaliana. Both AtXRCC3 and AtRAD51C expressed two alternatively spliced transcripts, and AtRAD51C produced two different sizes of isoforms, a long (AtRAD51Calpha) and a short one (AtRAD51Cbeta). The predicted protein sequences of these genes showed characteristic features of the RecA/**Rad51** family; especially the amino acids around the ATP-binding motifs were well conserved. The transcripts of AtXRCC3 and AtRAD51C were detected in various tissues, with the highest level of expression in flower buds. Expression of both genes was induced by gamma-ray irradiation. The results of yeast two-hybrid assays suggested that **Arabidopsis** **Rad51** family proteins form a complex, which could participate in meiotic recombination and/or homologous recombinational repair.

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